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THE PERCEIVED FAIRNESS OF SUBSIDIZED PRICES

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Abstract

In four experiments we asked consumers to suggest a new fair price for a firm that has experienced an increase in production costs. For non-subsidized firms, subjects reason according to the principles of distributive justice, disconfirming the predictions based on the dual entitlement principle. When the firm is subsidized, the dual entitlement principle is supported. Follow-up studies suggest that the dual entitlement effect for subsidized firms is limited to (1) situations in which respondents are impartial observers, rather than the firm's own customers, (2) situations where the stakeholders are affected in their long term (tax-payer) interests, or (3) situations in which customers do identify strongly with the objectives of the subsidized company.

Introduction

In recent years, consumer researchers have paid increasing attention to consumer fair price judgments in their reactions to price changes. Many studies have found that consumers react negatively to a supplier's exploitation of market power. Price increases are considered unfair when they are not justified by a corresponding increase in costs (Kahneman, Knetsch and Thaler 1986a,b; Campbell 1999). Consumers are also often unwilling to pay a price that is perceived as unfair (Urbany, Madden, and Dickson 1989), and may even lead to retiliatory customer behavior (Frey and Pommerehe 1993; Kachelmeier et al. 1991; Piron and Fernandez 1995). Moreover, there is some evidence that real-life pricing decisions do take consumer price fairness judgments into consideration. For instance, Olmstead and Rhode (1985) documented decisions by individual gasoline sellers not to increase price even in the absence of any immediate threat to future custom or threat of regulation. Similarly, Blinder (1991) noted that 61% of marketing executives considered the fairness constraint to be one of the most important reasons why sellers would not raise prices.

Here, we investigate how fair price judgments are affected by consumer knowledge of government sponsoring. In many markets, goods and services are provided to consumers by government or government-sponsored organizations in partial competition with profit-oriented firms (e.g., education, public transportation, student restaurants, health services, etc). For example, the 10% of public schools in US that offer the most generous subsidies actually subsidize 94.5% of the total cost of producing their students' education. The most generous 10% of private institutions subsidize 75.3% of their students' education (Winson and Yen 1995). The pricing policies of government sponsored firms are interesting because they are assumed to serve a social welfare goal. If they are operating in a market together with private firms, the subsidies allow them to price at the low end of the market. At the same time they are dependent on tax-payers' money, and the public requests accountability. Some prior research suggests that governments may be held to a more strict fairness standard than profit-oriented firms. For instance, they are less entitled than profit oriented firms to exploit market power (Frey and Pommerehe 1993). We want to expand on their findings, and explore how price changes are evaluated in more mundane (non-exploitative) situations.

Price fairness judgments

In attempt to explain price fairness judgment phenomena, Kahneman, Knetsch, and Thaler (1986a,b) in two influential papers proposed "dual entitlement" as the dominant norm of price fairness. They stated that buyers and sellers each recognize each other's entitlement according to the terms of some reference transaction – buyers to a reference price, sellers to a reference profit. Consumers use reference price as an anchor point to evaluate own gains and losses, and they use their knowledge about the firm's reference profit to evaluate the gains and losses of the transaction counterpart. According to the dual entitlement principle, a price increase, which violates the buyer's entitlement to the reference price, will be considered acceptable only if it perceived to be necessary to protect the seller's reference profit. This implies that a price increase that increases the seller's profit beyond its reference entitlement will be deemed unfair. According to the dual entitlement principle, it is considered fair if the company completely compensates its cost increase. It is also consistent with fairness norms not to pass cost decreases to the customer, since, in this case the seller's profit increases without violating the buyer's reference price entitlement.

A number of subsequent studies which concentrated both on outcomes and price setting rules have added to and refined these basic findings. Some research has found support for the role of reference profit in perception of fairness (Kachelmeier et al. 1991; Campbell 1999). Those findings report that price changes are consistently considered unfair when subjects attributed the price increase to a firm's attempt to take advantage of sudden demand increase (Kalapurakal et al. 1991; Kachelmeier et al. 1991; Piron and Fernandez 1995). In the situations when the same price increase occurred as a compensation for the increase of the firm's costs, the same practice becomes fair and accepted by a majority of respondents (Kahneman et al. 1986a; Frey and Pommerehe 1993).

The reported research results suggest that customers are sensitive not only to a company's reference profit but also to a reference pricing rule which generates this profit. Traditionally, the fair price has been conceptualized as based on cost rather than on demand (Okun 1981). Some economic models also suggest that the fair price may be based on consumer's expectations of the product cost to the seller (Glazer 1984). In general, economics assumes that perceived prices govern consumer choices among products. Demand converges to the lowest supplier price for an identical good. Thus fairness is not an issue in a competitive market, which by definition will not support super-normal profits. Here we take a different perspective. We assume that consumers' fairness rules are cost-based for a number of reasons. First, consumers may consider many cost factors including cost of time, uncertainty about competitors, search effort and so on. They may be faced with a price that minimizes their total cost but is still considered unfair. Second, once initiated, supplier-customer interactions have many features of a monopoly. For instance, consumers often choose a supplier before knowing anything about prices. They also may be locked into such relationships either by contract or psychologically, which makes it hard to compare prices between suppliers. Status quo bias (Samuelson and Zeckhauser 1988), sunk cost bias (Arkes and Blumer 1985), brand loyalty or mere habit (Muthukrishnan 1995) may create quasi-monopolistic relationships between firm and customer. In this situation, inferences about supplier's costs start to play an important role in the determination of the customer reference price and eventually affect price fairness judgments.

Empirical evidence supports these findings (Kahneman et al. 1986a; Kalapurakal et al. 1991; Dickson and Kalapurakal 1994; Seligman and Schwartz 1997; Kachelmeier et al. 1991; Piron and Fernandez 1995). First, in comparison of other price setting rules, the cost-based pricing rule was found to be fair in all price fairness studies. Second, the cost-based fairness rule implies consumer knowledge of company profit and, hence, the knowledge of company's costs is an important factor in price fairness judgments. Several studies (Kahnemann et al. 1986a,b; Campbell 1999) have confirmed the critical role of the inferred profit (and, therefore, supplier costs) in those situations. Obviously, the company's cost is not the only possible reference point for price fairness judgments. In competitive situations other reference points are equally likely (for example a competitor's price). However, several price researchers stress the seller's cost as a very important component of consumer price fairness judgments. According to Thaler (1985), "the most important factor in determining the reference price is fairness. Fairness, in turn, depends in large part on cost to the seller" (p. 205). Nagle and Holden (1995) also notice that "one way buyers infer fairness is to assess what it costs sellers to deliver the product" (p. 309).

The research results also indicate that the least fair pricing rule is the one based on supplier exploitation of a sudden demand increase (Kalapurakal et al 1991). The relative fairness perception of different cost-based rules has also been examined in a number of studies. Some of them support the dual entitlement principle (Kahneman et al. 1986a,b), but others present evidence for the greater perceived fairness of rules based on a more symmetric treatment of cost increases and decreases (Kalapurakal et al. 1991; Dickson and Kalapurakal 1994).

Until now, almost all price fairness studies have concentrated exclusively on private firms as the object of research. There is an important uninvestigated area concerning consumer price fairness judgments related to subsidized companies. In addition, the vast majority of studies concentrate on fairness judgments in situations of only one potential price change – a price increase. Clearly, in such cases the fairness concern is likely to be most salient for buyers and sellers. However, in some cases, price decreases by a company can also be considered unfair and eventually influence consumer behavior. For instance, this may happen in situations where price decreases are considered insufficiently deep (e.g., when the customer infers that costs have decreased even more). Another example is a company's reluctance to decrease the price in the absence of strong competition, which becomes apparent later, after new competitors have entered the market. In both situations the relationships (trust) between company and its consumers may deteriorate.

Third, the dual entitlement principle is presented in the current research literature as the dominant principle for price fairness judgments. It implies that company is allowed to increase price to completely compensate its costs increase, but can keep a share of benefits when costs decrease. This principle describes a consumer as a spontaneously altruistic person. This idea does not look very intuitive and requires further exploration. For instance, the findings of Kalapurakal (Kalapurakal et al. 1991; Kalapurakal and Dickson 1994) have shown that in some situations other principles are considered as being fairer than dual entitlement. So, the question remains how contextual factors affect the principles people use in their price fairness judgments.

Research framework

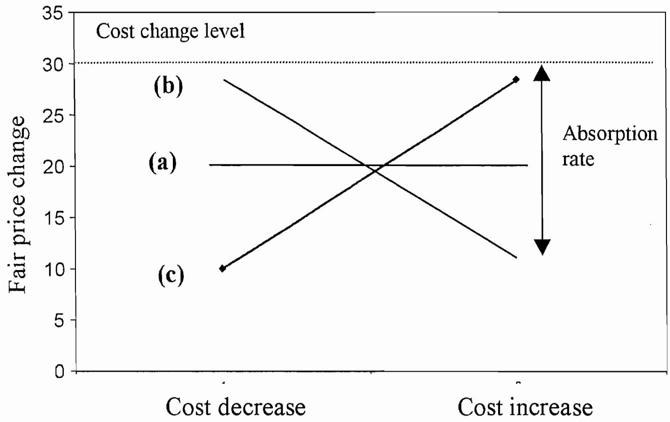

Figure 1. Theoretical patterns of price fairness judgments principles

In Fig. 1, we present a framework which summarizes the principles consumers may use when determining the fairness of price changes. When costs change, the consumers will infer the new fair price on the basis of their judgments about profit the company is entitled to make. In other words, consumers make normative judgments about the supplier absorption rate – the share of cost change the company should (or is allowed to) keep. For instance, when unit costs increase by 30 BEF, there are several options. First, the firm may be allowed to fully compensate its cost increase by setting a new price 30 BEF higher than the old one. This situation implies a zero absorption rate. Second, for some reasons it may not be considered fair for the firm to compensate its cost increase and to increase the price. In this case the absorbed amount will be maximal and equal to 30 BEF. Third, the company may be granted the partial compensation of cost increase, which leads to different values of absorption levels between 0 BEF and 30 BEF. The same situations may occur when costs go down. The fairness norms may require a company to decrease its price following the cost decrease (zero absorption rate). Alternatively, the company is allowed to keep all extra profits and keep the price at the old level (maximum absorption rate), or transfer some benefits to consumers (absorption rate is between zero and maximum value).

The combination of both cost increase and decrease results in an overall set of price fairness principles which people may use when seller's costs change (Figure 1). The first principle is symmetric and based on the distributive justice principle of equity (line (a)): suppliers ought to grant the customer a share in both the burden of a cost increase and the pleasure of a cost decrease (see Novoseltsev, 2000). This principle implies equal absorption rates, independent of whether the cost change is an increase or a decrease. At the extremes, this principle will translate in a 'buffering' rule, when all cost changes are absorbed by the supplier (absorption rate is maximum), or in a cost-plus rule when all changes are transferred to the consumer (absorption rate is zero). Several intermediate rules may be thought of, depending on the proportion of the cost change which is absorbed or transferred, but they are all symmetric because the absorption rate is the same for cost increases and cost decreases.

Two alternative principles may be asymmetric. According to the first asymmetric principle the supplier should absorb all cost increases, but transfer all cost decreases to the customers (line (b)). From the customer perspective this principle implies self-interest motivation. Consumers require the company to decrease the price when costs go down. At the same time consumers protect their interests and do not allow the company to increase the price in order to compensate its cost increase. The second asymmetric principle suggests that the supplier is permitted to increase price whenever it is justified by a cost increase but is allowed to keep a share of benefits when supplier costs decrease (line (c)). This situation reflects the altruistic motivation of consumers assumed in the dual entitlement principle. Instead of sharing benefits and burdens consumers allow company to benefit out of both situations of cost increase and decrease.

Absorption rates for cost increase and cost decrease situations are two characteristics which help to distinguish one principle from another. Identical absorption rates describe the symmetrical price fairness judgment pattern. When the absorption rates are different, they imply either a self-interest principle or an altruistic principle.

Consumer fair price judgments for subsidized companies

The three presented principles are based on three different norms or motives which individuals may use in their price fairness judgments. Those norms are based on justice, altruism and self-interest motives, respectively.

The economic literature suggests a number of factors which may lead to the arousal of consumer altruistic motivation for subsidized companies. These factors include a sense of civic duty (Katosh and Traugott 1982), public-regard (Wilson and Banfield 1964), and concerns about justice (Tyler et al. 1985, Deutsch, 1975; Leventhal, 1976). Rasinski and Rosenbaum state (1987, p. 992), "In fact,... research suggests that the citizen's sense of public responsibility may completely overcome his or her own self-interest when making decisions about public services and the funding of such services". Additionally, Rasinsky and Tyler (1986) found that non-self-interested factors (e.g. concern for the quality of education and sympathy with teachers over low salaries) carried more weight in predicting hypothetical support for subsidies increase than did self-interest. The authors point out the consistency of these findings with prior work showing strong public support for policies that benefit the general social welfare. Finally, in their analysis of the content of many subsidized companies' appeals, Berkowitz and Daniels (1963) found that assertion of dependency was very common instrument used to generate a consumer support. The perception of a dependent relationship is assumed to arouse feelings of responsibility to others and to increase willingness to behave altruistically towards these others (Berkowitz and Daniels 1963).

In the current studies we test the hypotheses that (1) subsidized companies are subject to different consumer price fairness judgments than their non-subsidized counterparts; and (2) those judgments follow the altruistic (dual entitlement) pattern which implies a low absorption rate for costs increase and a high absorption rate for costs decrease situations. Below we report three lab experiments and one field study examining the fairness principles consumers apply to government sponsored firms' price change decisions.

Study 1: Judgment of fair price in the presence of subsidies.

In Study 1, we studied how the presence of information about subsidies influences the pattern of price fairness judgments. We used a classic 'vignette' paradigm, described below.

Subjects and procedure.

One hundred eighty two undergraduate students from a Dutch-speaking Belgian university participated in the study as part of a course requirement for an undergraduate business class. They were asked to participate in a short survey related to pricing policies of firms. The experiment was held at the start of a regular class lecture. The subjects were asked to carefully read a paragraph containing the experimental manipulations, and to answer the question about the new fair price the company should set. No other measures were taken. After five minutes all questionnaires were returned back to the administrator.

Design

Participants were randomly assigned to the cells in 2x2x2 factorial between subjects design. Each of the eight cells corresponded with a different version of the same basic scenario, describing a firm confronted with a specific change in unit costs for its service (30 Belgian Francs (BEF)). We manipulated whether the scenario mentioned an increase or an equivalent decrease in costs, and whether or not the firm was sponsored by the federal government. Financial information about the government sponsored firm was constructed such that the current costs was identical to that of the non-sponsored firm (150 BEF). The price charged by the non-sponsored firm was 180 BEF and its profit therefore was 30 BEF. The sponsored firm charged 120 BEF and received 30 BEF worth of subsidies per unit sold. Two replications were used: in one set of scenarios the firm was a student restaurant; in a second set it was a guided tourist bus ride through a medieval city center. In both cases the companies were said to be located in a different town than where data were collected. Subjects were asked what would be a fair new price for the service. The dependent variable was the absolute difference between the current price and the new fair price. An example of the scenario is presented in Appendix A (the subsidized firm-cost increase-tourist ride' cell of the design).

Results.

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INSERT FIG 2 ABOUT HERE

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There was no main effect nor any interaction involving the scenario factor, which is therefore omitted from the further description of the results. Figure 2 shows a strong interaction effect between the presence of information about government sponsorship and the direction of the cost change ($F(1, 178) = 13.53$; $p < .001$). Profit-oriented firms were subjected to a distributive justice rule, closely resembling a cost-plus rule. The slope of the line is not significantly different from zero ($F(1, 178) = 1.06$; $p<0.3$). Most of the cost change could be transferred to the customer, but the proportion did not differ between cost increases and decreases. For the subsidized firm, the pattern of results closely resembled the dual entitlement rule. In this case, the effect of the cost change was statistically significant ($F(1, 178) = 38.8$; $p<.0001$) with high absorption rate for costs decrease and low absorption rate for costs increase.

Discussion.

Apparently, consumers use different standards to evaluate price fairness for subsidized and non-subsidized firms. The results of the study confirm our hypothesis about the altruistic pattern of price fairness judgments for subsidized firms, which is consistent with the dual entitlement principle of Kahneman et al. (1986a). On the other hand, we did not find the dual entitlement pattern for non-subsidized companies. These results are consistent with earlier suggestions that fairness judgments are context specific (Dickson and Kalapurakal, 1994), and that the dual entitlement principle may not be the most fair under all circumstances (Kalapurakal et al., 1991). In the next study we elaborated on this idea and investigated the price fairness judgments when additional information about the causes of the change in costs was provided.

Study 2: The effect of providing reasons for cost changes

In Study 2, we examined whether the differences between subsidized and non-subsidized companies could be due to differences in spontaneous inferences about managerial responsibility for cost changes. Public opinion about subsidized firms often includes inferences about their less accountable management. It is possible that observers reason that subsidized firms have a different management structure in which cost changes are external to individual managers' responsibilities. We compare scenarios in which no responsibility information is given with scenarios in which management is explicitly said to be either responsible or not responsible for the cost change. If differences in perceived accountability account for the difference between subsidized and non-subsidized firms, these manipulations should remove the effect obtained in Study 1.

Three hundred ninety eight undergraduate students participated in the study. The procedure was identical to that of Study 1.

Design.

All participants were randomly assigned to the cells in 2x2x3 between subject design, where the factors were (1) two possible situations of changes in costs (30 BEF decrease vs. 30 BEF increase), (2) whether the information of subsidies was present or not, and (3) the reasons of cost changes (one third of the subjects was told that the cost change was due to (smart or dumb) managerial action (internal responsibility), one third was told it was due to uncontrollable external circumstances (a tax increase), and one third was told nothing (spontaneous condition)). The later condition served as a pure replication of Study 1, and as a benchmark to evaluate the responsibility manipulation. Because Study 1 did not reveal any differences between the two scenarios, we only utilized the tourist service scenario.

Results

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INSERT FIG 3 ABOUT HERE

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The results are shown in Figure 3. They reveal that the responsibility manipulation had no impact on the patterns of price fairness judgments (3-way interaction effect $F(2, 382) = 0.21$; $p<0.81$). The two-way interaction pattern of Study 1 is replicated in each of the three responsibility cells ($F(1,382)=5.3$; $p<0.02$; $F(1,382)=7.9$; $p<0.005$; $F(1,382)=10.4$; $p<0.001$; for spontaneous, external, and internal responsibility conditions respectively). In all three conditions the subsidized firms are entitled to transfer cost increases entirely, while they can keep much of the benefits of a cost decrease (simple effects are $F(1,382)=16.8$; $p<0.001$; $F(1,382)=22.0$; $p<0.001$; $F(1,382)=21.3$; $p<0.001$ for spontaneous, external, and internal responsibility conditions respectively). These results are, again, consistent with the dual entitlement principle, regardless of managerial responsibility. The non-subsidized firms were always subjected to a cost-plus rule, in which cost decreases as well as increases need to be transferred (all simple effects are $F(1,382)<1$). The responsibility manipulation only affected the absorption rates ($F(1,254)=5.28$; $p<0.05$). When responsibility is high, the supplier is expected to absorb more of the cost change. That is, the inferred responsibility for cost changes may differentiate between cost-plus rules with different absorption rates, but does not affect which price fairness principle is applied.

Discussion.

The striking result in this study is that subsidized firms are not held responsible for changes in costs, even when they are the result of their own bad managerial decisions. In all situations respondents allow the subsidized companies to compensate their cost increases completely (or even overcompensate it) and benefit from cost decreases (Table 1).

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INSERT TABLE 1 ABOUT HERE

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Again, as in the Study 1, belief in the dual-entitlement principle seems to be very strong for subsidized firms while it is completely absent for profit-oriented firms. Even when cost increase is attributed to a dumb managerial action, the subsidized company is still allowed to benefit from being subsidized. In contrast, the profit-oriented firms should always use a cost-plus pricing policy and transfer most of their cost decreases to customers, even if they are the result of good management. Moreover, they are never allowed to benefit from cost decreases to the same extent as the subsidized firms, regardless the reasons of those decreases.

In both Studies 1 and 2 we asked respondents about their price fairness judgments without placing them in the role of an actual customer. This detached perspective reflects a situation when respondents act as observers, and their judgments reflect public opinion about market behavior in general. The same observer perspective has been used in virtually every prior fair price study. A lot has been written about the important role that public opinion plays in business life and its potential impact on the firm's profit in the long run (White and Mazur 1995; Fombrun 1996; Van Riel and Blackburn 1995), but it is unclear to which extent these results generalize to actual customer-supplier relationships. Only a few prior studies (see Piron and Fernandez, 1995) suggest that consumers also judge a firm' fair behavior when they actively participate in the exchange process as customers, and may retaliate when they perceive the situation as unfair. That is why we decided to put the dual entitlement principle to an even stronger test by examining the real-life customer price fairness judgments.

Study 3: Judgment of fair price in the presence of subsidies in real-life conditions.

For our field study, we chose the customers of a local student restaurant subsidized by the government. The restaurant serves about 2000 meals per day in six city locations, most of them to university students and personnel. It offers a menu of dishes in five price categories (BEF 77, 100, 116, 133, and 148). One hundred and twenty nine customers were intercepted at the entrance of the restaurant, and shown the name, list of ingredients, and current price of five meals frequently on the menu, one in each price category. The scenario mentioned that recently one cost component (ingredient costs, labor costs, or subsidies) had increased or decreased by 10%, and subjects were asked to suggest a fair new price for each meal.

Design

The experiment was run as a 3x2x5 mixed factorial design. Independent variables were (1) three possible situations of changes in the restaurant cost structure (change in costs of ingredients, changes in labor costs, and changes in subsidies), (2) two possible directions of the cost change (10% increase, 10% decrease), and the 5 price levels available in the restaurant. Price level was a within subjects factor. As in the Studies 1 and 2 the dependent variable was the absolute difference between new fair price and old price for each dish.

Results.

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INSERT FIG 4 ABOUT HERE

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The resulting price fairness judgments for ingredient costs change are presented on Figure 4. The three-way (current price level*type of cost change*direction of cost change) interaction was not significant ($F(8,492)=1.08$; $p<0.37$). We observed the same pattern of responses for the three types of cost change ($F(2,123)=0.36$; $p<0.69$), and this factor is omitted from further discussion. The two-way interaction of current price level and direction of cost change was highly significant ($F(4,492)=11,69$; $p<0.0001$). The results show a pattern that is reminiscent of the dual entitlement principle only for the cheapest BEF 77 dishes. In all other cases, the pattern is self-serving (all $p<0.05$). A fair new price would be one that transfers the benefit of a cost decrease entirely to the customer, while the restaurant should absorb most of a cost increase. For four out of five dishes customers did not allow the restaurant to compensate its cost increases by correspondent increase in prices. Moreover, to be considered fair, the restaurant should transfer almost all cost decreases to the customer.

Discussion.

The results of Study 3 suggest that the dual entitlement principle is not generalizable, even not when the firm is subsidized. When consumers are queried in their role as customers ("with their wallets in their hands"), they maintain a rather egoistic, self-serving view of fairness, even when the firm is obviously subsidized by the government and they belong to the benefited target audience. They do not allow the restaurant to increase prices to directly compensate the cost increase. At the same time almost all cost decreases should be transferred to the customer. In hindsight we can explain the discrepant result for the BEF 77 dish by the observation that the majority of students rarely buy the cheapest dish. They typically choose from the higher price dishes. They may allow the restaurant to increase prices for the BEF 77 dish in order to protect the current price of their more preferred higher priced dishes. From this perspective, the observed pattern for BEF 77 dish also reflects self-interest motivation. However, in comparison with the higher-priced dishes the self-interest mechanism for the cheapest dish may be different. Consumers may allow the firm to benefit from cost decreases and compensate its cost increases for the cheapest dish hoping that this additional income could protect prices of their preferred dishes.

In order to test the hypothesis about the impact of the long-term self-interest motivations we decided to investigate the role of financial incentives in price fairness judgments for subsidized companies in more detail.

Study 4. The role of financial incentives in fair price judgments for subsidized companies

The results of Study 3 suggested that the dual entitlement pattern of fair price judgments for subsidized firms may reflect concerns about long term self interest. When judging the focal price, consumers may accept a high absorption rate for cost decreases and a low absorption rate for increases because they hope that this will protect their interests in the long run. The restaurant scenario in the previous study reflected a very specific situation in which purchases of higher priced dishes may be perceived as subsidizing the price of the most 'democratic' dish. In other, more general, situations subsidies are funded by taxes. Similar to the restaurant scenario, consumers may allow a subsidized firm to absorb cost decreases, and transfer increases to alleviate the burden they carry as tax-payers. This hypothesis was investigated in Study 4.

Subjects and procedure.

Two hundred sixty five undergraduate business students participated in the study. The procedure was identical to that in Studies 1 and 2. The subjects were asked to participate in a short survey related to pricing policies of companies. The participants received a one-page story about a zoo located in a Belgian town and subsidized by local taxes. The stories mentioned the current price of an entrance ticket, and a "best estimate" of the operational cost per visitor. Participants were asked to read the story carefully and suggest a new fair entrance price for the zoo, after its operational costs had changed. After five minutes all questionnaires were returned back to the administrator.

Design.

All participants were randomly assigned to the cells in a 2x2x2 between subject design. The first independent variable was the direction of the change in costs (60 BEF increase, 60 BEF decrease). Further subjects were asked to imagine that they either did or did not pay local taxes that supported the zoo (as an inhabitant of the city). They also had to imagine that they either were or were not regular visitors of the Zoo. An example of the scenario is presented in Appendix B (the customer – tax payer – cost increase cell of the design). As in the previous studies, the dependent variable was the absolute difference between the current price and the new fair price.

Results.

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INSERT FIG 5 ABOUT HERE

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The results are presented in Figure 5, and reveal a strong three-way interaction between the three independent variables ($F(1,257)=8.92$; $p<0.003$). Subjects in taxpayer condition demonstrated a clear dual entitlement pattern ($F(1,257)=22.3$; $p<0.0001$). However, when financial incentives were eliminated (non-taxpayer condition) the altruism disappeared in the non-customer condition. In the customer condition the manipulation of financial incentives had no effect.

Discussion.

The results demonstrated that the financial incentives play an important role in individuals' price fairness judgments. When non-customers have no long-term self-interests they tend to consider a distributive justice pattern as fair. In this situation their fairness judgments are based on justice norms and do not grant any benefits to the zoo nor to the customer. Only when their long term interests as tax payers are threatened, their price fairness judgments closely resembled the 'altruistic' dual entitlement principle. In this case they allow the zoo to compensate its cost increase and benefit from cost decrease in order to let the company generate additional money and eventually to avoid future need for subsidies.

The results with customers are less clear. Both the taxpayer and the non-taxpayer groups display the dual entitlement pattern. Two potential explanations can be proposed. The first one is related to the used methodology. In our experimental setting subjects had to make their fairness judgments from a detached perspective. Although we chose an existing Belgian zoo, students may have had difficulties to imagine themselves as customers. Some previous publications in price fairness literature also point on the difficulties related to the manipulation of customer vs. non-customer factor (Kalapurakal et al. 1991). In our case the manipulation might not have been strong enough to find a difference in the dependent variable. The second explanation is more complex. It is possible that when subjects are queried in their role as customers of the zoo, the situation may arouse feelings of empathy for the company. Regular visitors of the zoo may also be 'supporters' of the zoo[1]. The empathic motivation may overshadow the effect of the financial incentives. As a result, even when the financial incentives and self-interest motives are low, individuals may still follow the dual entitlement principle in their judgments driven by empathic altruistic motivation. How customers would react if their altruistic and utilitarian motivations are explicitly contrasted is obviously a question for further research.

General discussion

We reported four studies examining the fairness principles consumers apply to evaluate fair prices for government sponsored firms. We find that subsidized companies are subject to different price fairness rules than their profit-oriented counterparts. Our results are consistent with some prior suggestions that the dual entitlement principle in the price fairness judgments is not universal. We consistently find that for profit-oriented firms suggested fair prices conform to a cost-plus pricing policy in which most of the changes in costs are transferred to the customer. Subsidized firms, on the other hand, are evaluated according to the dual entitlement principle. They are allowed to absorb cost decreases and can transfer cost increases to the public (Study 1). These results are not mediated by inferences about managerial responsibility for the cost changes (Study 2).

We also find that the perspective of the judge seems to influence price fairness judgments dramatically. When consumers evaluate price fairness 'from a distance' they tend to follow either altruistic (in case of subsidized companies) or distributive justice (for non-subsidized firms) principles for fair price judgments. However, when actual customers are surveyed, we found exactly the opposite: cost increases should be absorbed, while decreases have to be transferred. We suggest the possibility that results we obtained may be due to a self-serving motivation on the part of the respondents.

Finally, we find that the self-serving orientation may have several sources. When participants are involved in a particular purchase, they display a self-serving pattern

[1] The zoo that was featured in the scenarios of study 4 actually runs "animal adoption" and other support programs targeted at its most frequent visitors.

of judgments (Study 3). However, even though individuals took a 'detached' perspective in Studies 1 and 2, and were not directly affected as customers, they might be well aware that the subsidies come from tax-payers' (that is: their own) money. Allowing a subsidized firm to transfer cost increases and to absorb decreases may be self-serving because it would reduce the need for subsidies. This hypothesis was confirmed in Study 4.

The results of the studies leave important questions for future research. First, the results of our experiments shed some light on the nature of the dual entitlement principle. We argue that the observable altruism of the dual entitlement principle may actually be based on long-term self-interest. Individuals may allow the company to benefit from cost decrease and compensate cost increase only to limit their own private contribution to the subsidy. However, this explanation can not explain all our data. The discrepant results of the 'customer' condition in Study 4 leaves room for truly altruistic principles in price judgments. The respondents may feel more empathy for the subsidized firm, than for the profit-oriented firm. Empathy feelings may foster the price fairness judgments according to the dual entitlement principle, rather than distributive justice or self-interest principle. Subsidized companies, for instance, may create an image of dependency arousing empathy feelings and eventually altruistic consumer behavior.

Empathy might also be due to consumers' close identification with management teams of subsidized companies. Some prior results suggest that the dual entitlement principle applies more to small firms than to large firms, and more to individuals than to firms (Kahneman, Knetsch and Thaler 1986a,b; Seligman and Schwartz 1997). Consumers may perceive people working in subsidized companies as a part of the same "non-business" social group whose interests are related to social welfare rather than profit creation. Group identity theory (Tajfel and Turner 1986) predicts that members of a group seek to establish a positive group identity by favoring their own group members over the members of other groups in their allocation of rewards. Thus, the customers who closely identify themselves with the company may be more likely to follow the dual entitlement principle in their price judgments. Obviously the future research should be aimed at separating the impact of those different mechanisms on consumer price evaluations.

Appendix A. Study 1: the subsidized firm-cost increase-tourist ride cell of the design.

Hieronder vind je een korte beschrijving van een onderneming die geconfronteerd wordt met een nieuwe uitdaging. Deze uitdaging kan gevolgen hebben voor het prijsbeleid van de onderneming.
Jou wordt gevraagd of en hoe de onderneming nu de prijs voor haar product of dienst zou moeten aanpassen. Er zijn geen juiste of verkeerde antwoorden op deze vraag. Elke respondent in dit onderzoek krijgt een vraag over een verschillend scenario. Vul in wat volgens jou een rechtvaardige nieuwe prijs zou zijn in dit specifieke geval.

Firma X verzorgt toeristische rondritten met een autotreintje doorheen het historische centrum van Brugge. De onderneming wordt door de overheid gesubsidieerd. De rondritten kosten firma X gemiddeld 150 frank per passagier. Deze totale kost omvat alle relevante kosten: loonkost, taxen, de afschrijvingen op het rollend materieel, ... De overheid legt 30 frank toe op elke rit. Dankzij de subsidies kost een rondrit aan de klant 120 frank.

Nu blijkt dat de kosten voor Firma X met 20% zullen stijgen. De totale kost per rit stijgt dus van 150 frank naar 180 frank. Men moet beslissen over een rechtvaardige nieuwe (faire) prijs. Wat is volgens u een rechtvaardige nieuwe prijs ? Hoeveel mag firma X na deze kostenverhoging aanrekenen?

De rechtvaardige nieuwe prijs voor een rondrit is .... frank *(bedrag invullen).*

Appendix B. Study 4: the customer–tax payer–cost increase cell of the design.

Hieronder vind je een korte beschrijving van een onderneming die geconfronteerd wordt met een nieuwe uitdaging. Deze uitdaging kan gevolgen hebben voor het prijsbeleid van de onderneming.

Jou wordt gevraagd of en hoe de onderneming nu de prijs voor haar product of dienst zou moeten aanpassen. Er zijn geen juiste of verkeerde antwoorden op deze vraag. Elke respondent in dit onderzoek krijgt een vraag over een verschillend scenario. Vul in wat volgens jou een rechtvaardige nieuwe prijs zou zijn in dit specifieke geval.

De Belgische stad X. heeft een dierentuin die financieel gesteund wordt door het stadsbestuur. De subsidies komen van lokale belastingen, betaald door de inwoners van de stad. De dierentuin is erg populair, en zelf ben je ook een regelmatig bezoeker. Je woont ook in deze stad, en je betaalt er belastingen. Het in stand houden van de dierentuin (onderhoud, lonen, verzorging van de dieren, kweekprogramma's, ...) kost behoorlijk veel geld. De gemiddelde kost per bezoeker is 530 frank. De stad draagt momenteel echter 100 frank per bezoeker bij, zodat de bezoeker maar 430 frank betaalt voor een ticket. Recent zijn de kosten van de dierentuin behoorlijk gestegen. Per bezoeker is de feitelijke kost nu gestegen van 530 naar 590 frank. De directie moet nu beslissen over een nieuwe prijs. Welke nieuwe prijs zou volgens jou billijk zijn? Een billijke nieuwe prijs voor een toegangsticket is ..... frank *(bedrag invullen)*.

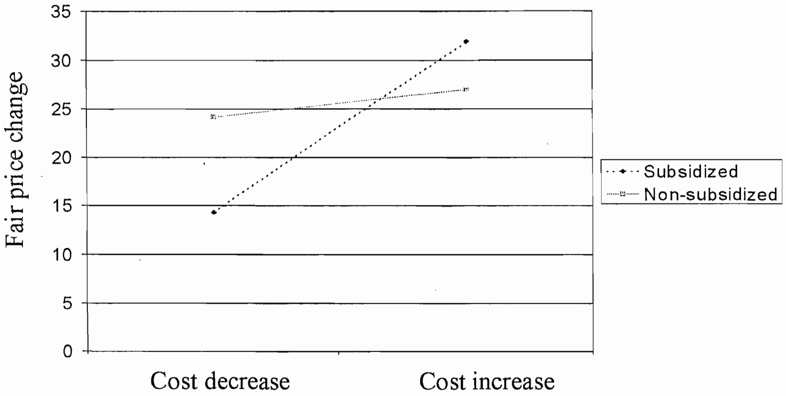

Figure 2. Absolute fair price change as a function of cost change direction and presence or absence of subsidies (Study 1)

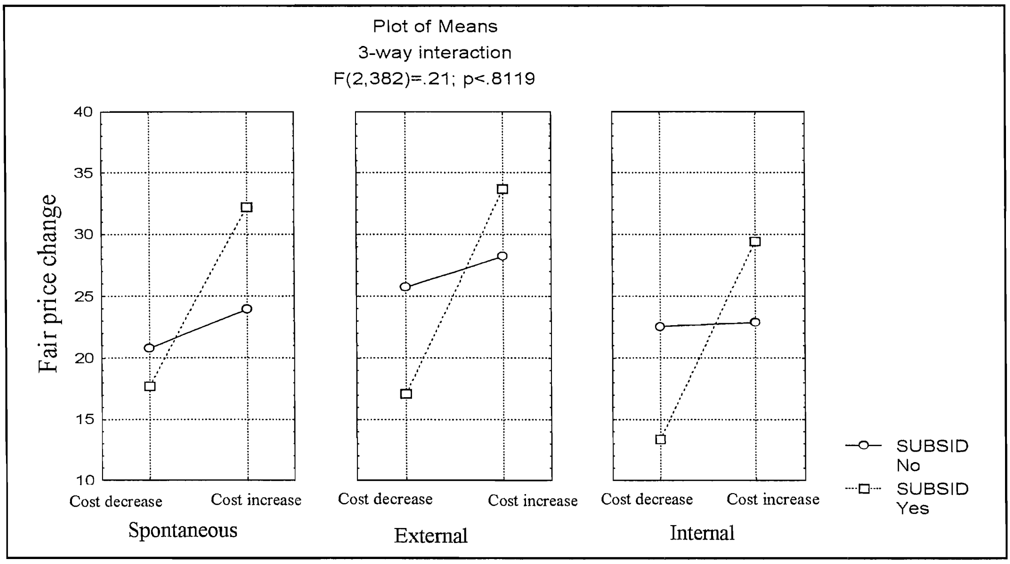

Figure 3. Absolute fair price change as a function of cost change direction, presence or absence of subsidies, and information about managerial responsibility (Study 2).

Type of reason	Type of company	Direction of costs change	
		Decrease	Increase
Spontaneous	Subsidized	17.7 (0.000)	32.2 (0.381)
	Non-subsidized	21 (0.000)	23.9 (0.012)
External	Subsidized	17.1 (0.000)	33.7 (0.134)
	Non-subsidized	25.7 (0.071)	28.2 (0.493)
Internal	Subsidized	13.4 (0.001)	29.4 (0.811)
	Non-subsidized	22.5 (0.002)	22.8 (0.002)

Note: The p-values of difference from 30 BEF are in parentheses.

Table 1. Means of absolute difference between current and new fair price (Study 2)

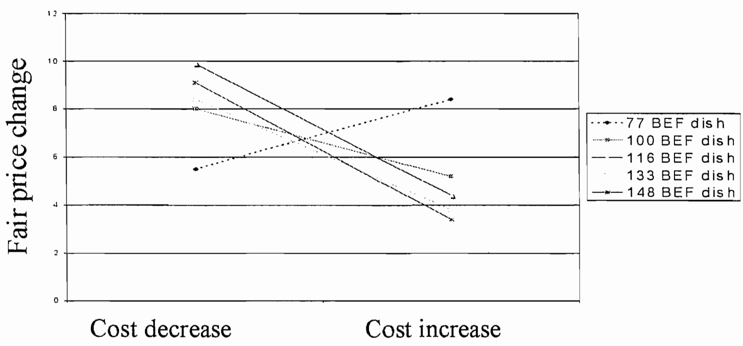

Figure 4. Absolute change in the fair price suggested by customers in response to a 10% cost increase or decrease (Study 3).

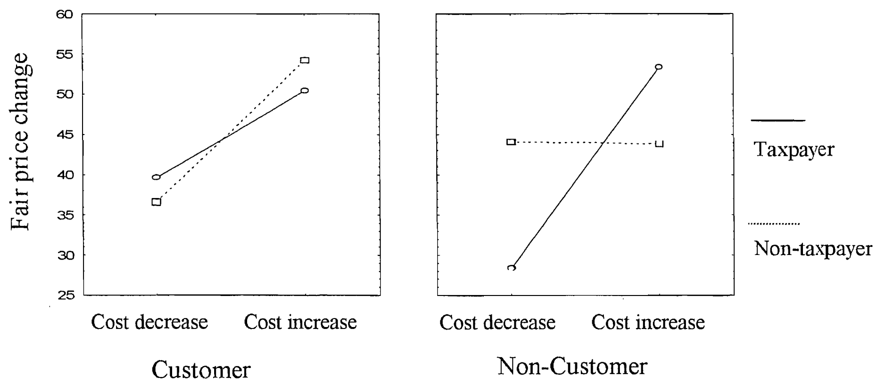

Figure 5. Absolute fair price change as a function of cost change direction, payment of taxes, and whether the respondent is customer of the company or not (Study 4).

REFERENCES

Arkes, H. R. and C. Blumer (1985), "The Psychology of Sunk Cost", *Organizational Behavior and Human Decision Processes*, 35, 124-140.

Batson, C. D. (1996), *Empathy, Altruism, and Justice: Another Perspective on Partiality*. In L. Montada and M. J. Lerner (eds.), Current Societal Concerns About Justice. Plenum: New York.

Berkowitz, L. and L. R. Daniels (1963), "Responsibility and Dependency," *Journal of Abnormal and Social Psychology*, 66, 429-436.

Blinder, A. (1991), "Price Stickiness in Theory and Practice," *American Economic Review Papers and Proceedings*, May, 89-100.

Campbell, M. C. (1999), "Perceptions of Price Unfairness: Antecedents and Consequences," *Journal of Marketing Research*, May, 187-199.

Deutsch, M. (1975), "Equity, Equality, and Need: What Determines which Value Will be Used as a Basis for Distributive Justice?" *Journal of Social Issues*, 31, 137-149.

Dickson, P. R. and R. Kalapurakal (1994), "The Use and Perceived Fairness of Price-Setting Rules in the Bulk Electricity Market," *Journal of Economic Psychology*, 15, 427-448.

Fombrun, C. J. (1996), *Reputation: realizing value from the corporate image*. Harvard Business School Press. Boston (Mass.)

Frey, B.S. and W.W. Pommerehne (1993), "On the Fairness of Pricing – an Empirical Survey Among the General Population", *Journal of Economic Behavior and Organization*, 20, 295-307.

Glazer, A. (1984), "The Client Relationship and a "Just" Price," *American Economic Review*, Vol. 74, 1089-1095.

Kachelmeier, S.J., Limberg, S.T., Schadewald, M.S., (1991), "A Laboratory Market Examination of the Consumer Price Response to Information About Producerss Costs and Profits", *Accounting Review*, 66, 694-717.

Kahneman, D., J. Knetch and R. Thaler (1986a), "Fairness Constraints on Profit Seeking: Entitlements in the Market", *American Economic Review*, 76, 728.

Kahneman, D., J. Knetch and R. Thaler (1986b), "Fairness and the Assumption of Economics", *Journal of Business*, 59, S285.

Kalapurakal, R., P. R. Dikson and J. E. Urbany (1991), Perceived Price Fairness and Dual Entitlement," in *Advances in Consumer Research*, Vol. XVIII: Association for Consumer Research.

Katosh, J. P. and J. W. Traugott (1982), "Cost and Values in the Calculus of Voting", *American Journal of Political Science*, 26, 361-76.

Leventhal, G. S. (1976), "The Distribution of Rewards and Resources in Groups and Organizations," *Advances in Experimental and Social Psychology*, 9, 91-131.

Muthukrishnan, A. V. (1995), "Decision Ambiguity and Incumbent Brand Advantage," *Journal of Consumer Research*, 22, 98-109.

Nagle, T.T., and R.K. Holden, (1995), *The Strategy and Tactics of Pricing*, 2nd ed., Prentice Hall.

Novoseltsev, A.L. (2000), "A Comprehensive Model of Consumer Fair Price Judgments," Manuscript in preparation.

Okun, A. (1981), *Prices and Quantities: A Macroeconomic Analisys*, Washington, D.C.: The Brooking Institute.

Olmstead, A. L. and P. Rhode (1985), "Rationing Without Government: The West Coast Famine of 1929", *American Economic Review*, 15, 1044-1055.

Piron, Robert and Luis Fernandez (1995), "Are Fairness Constraints On Profit-Seeking Important ?", *Journal of Economic Psychology*, 16, 73.

Rasinski, K. A. and S. M. Rosenbaum (1987), "Predicting Citizen Support of Tax Increases for Education: A Comparison of Two Social Psychological Perspectives", *Journal of Applied Social Psychology*, 17, 990-1006.

Rasinski, K. A. and Tyler, T. R. (1986). Social Psychology and Political Behavior. In *Political Behavior Annual*, ed. S. Long, vol. 1. Boulder, Colo: Westview.

Samuelson, W. and Zeckhauser, R. (1988), "Status-Quo Bias in Decision Making", *Journal of Risk and Uncertainty*, 1, 7-59.

Seligman, D.A. and B. Schwartz (1997), "Domain Specificity of Fairness Judgments in Economic Transactions" *Journal of Economic Psychology*, 18, 579-604.

Tajfel, H. and J. C. Turner (1986), "The Social Identity Theory of Intergroup Behavior," in S. Worchel and W. G. Austin (eds.), *Psychology of Intergroup Relations*. Chicago: Nelson Hall.

Thaler, R. (1985), "Mental Accounting and Consumer Choice", *Marketing Science*, 4.

Tyler, R. R., K. A. Rasinski, and K. M. McGraw (1985), "The Influence of Perceived Injustice Upon Support for the President, Political Authorities, and Government Institutions", *Journal of Applied Social Psychology*, 48, 72-78.

Urbany, J.E., T.J. Madden, and P.R.Dickson (1989), "All's Not Fair in Pricing: An Initial Look at the Dual Entitlement Principle," *Marketing Letters*, 1, 17-25.

Van Riel, C. B. M. and C. Blackburn (1995), *Principles of corporate communication*. Prentice-Hall International: London.

White, J. and L. Mazur (1995), *Strategic Communications Management: Making Public Relations Work.* Addison-Wesley Publishing Company.

Wilson, J. Q. and E. C. Banfield (1964), "Public Regardingness as a Value Premise in Voting Behavior", *American Political Science Review*, 50, 491-505.

Winson, G. C. and I. C. Yen (1995). *Costs, subsidies, and aid in U.S. higher education.* Williamstown, MA: Willams Project on the Economics of Higher Education, Discussion Paper No. 32.